

## **APPENDIX C**

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### **TOPOGRAPHY, GEOLOGY, AND SOILS**

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## APPENDIX C TOPOGRAPHY, GEOLOGY, AND SOILS

The soils in the study area that are rated as having a moderate and severe potential for erosion hazard on roads and trails are listed in Tables C-1 and C-2. According to the U.S. Department of Agriculture (USDA) Natural Resources Conservation Service (NRCS) soil reports for each county in the study area, the potential for erosion hazard:

is described as “slight,” “moderate,” or “severe.” A rating of “slight” indicates that little or no erosion is likely; “moderate” indicates that some erosion is likely, that the roads or trails may require occasional maintenance, and that simple erosion-control measures are needed; and “severe” indicates that significant erosion is expected, that the roads or trails require frequent maintenance, and that costly erosion-control measures are needed. (USDA NRCS 2014a and 2014b)

**Table C-1. Soils in the Vicinity of CSXT Rail Lines in the Study Area  
with Moderate and Severe Potential for Erosion Hazard on Roads and Trails**

<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>County</b>	<b>Erosion Potential</b>
BdlC2	Belmore loam, 6 to 12 percent slopes, eroded	Delaware, IN	Moderate
Ble1B1	Blount silt loam, end moraine, 2 to 4 percent slopes	Darke, OH; Shelby, OH	Moderate
Blg1B1	Blount silt loam, ground moraine, 2 to 4 percent slopes	Darke, OH; Shelby, OH	Moderate
CaB2	Camden silt loam, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate
CeB	Celina silt loam, 1 to 4 percent slopes	Randolph, IN	Moderate
CeB	Celina silt loam, 2 to 6 percent slopes	Darke, OH; Shelby, OH	Moderate
CnB2	Celina silt loam, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate
CrB	Crosby silt loam, 2 to 6 percent slopes	Darke, OH; Shelby, OH	Moderate
CrB2	Crosby silt loam, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate
EnB	Eldean loam, 2 to 6 percent slopes	Darke, OH	Moderate
ElB	Eldean loam, 2 to 6 percent slopes	Shelby, OH	Moderate
EoC2	Eldean-Casco complex, 6 to 15 percent slopes, eroded	Shelby, OH	Moderate
EsB2	Eldean-Morley complex, 2 to 6 percent slopes, eroded	Shelby, OH	Moderate
FoB2	Fox silt loam, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate

Map Unit Symbol	Map Unit Name	County	Erosion Potential
FoC2	Fox silt loam, 6 to 12 percent slopes, moderately eroded	Madison, IN	Moderate
FsB	Fox silt loam, till substratum, 2 to 6 percent slopes	Madison, IN	Moderate
FsB2	Fox silt loam, till substratum, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate
FxB3	Fox soils, till substratum, 2 to 6 percent slopes, severely eroded	Madison, IN	Moderate
GlrB2	Glynwood silt loam, 1 to 4 percent slopes, eroded	Delaware, IN; Shelby, OH	Moderate
GnB	Glynwood silt loam, 2 to 6 percent slopes	Darke, OH	Moderate
GlB	Glynwood silt loam, 2 to 6 percent slopes	Shelby, OH	Moderate
GnB2	Glynwood silt loam, 2 to 6 percent slopes, eroded	Darke, OH	Moderate
LeB	Lewisburg silt loam, 2 to 6 percent slopes	Darke, OH	Moderate
LnB2	Losantville silt loam, 2 to 6 percent slopes, eroded	Randolph, IN	Moderate
MpC3	Miami complex, 6 to 12 percent slopes, severely eroded	Hancock, IN	Moderate
MmcB2	Miami loam, 2 to 6 percent slopes, eroded	Delaware, IN	Moderate
MmA	Miami silt loam, 0 to 2 percent slopes	Hancock, IN	Moderate
MmB2	Miami silt loam, 2 to 6 percent slopes, eroded	Marion, IN; Hancock, IN	Moderate
MnB2	Miami silt loam, 2 to 6 percent slopes, moderately eroded	Madison, IN	Moderate
MmC2	Miami silt loam, 6 to 12 percent slopes, eroded	Marion, IN	Moderate
MoB2	Miami silt loam, gravelly substratum, 2 to 6 percent slopes, eroded	Randolph, IN	Moderate
MmB	Miamian silt loam, 2 to 6 percent slopes	Darke, OH	Moderate
MmC2	Miamian silt loam, 6 to 12 percent slopes, eroded	Darke, OH	Moderate
MuB	Morley silt loam, 3 to 6 percent slopes	Randolph, IN	Moderate
OcB	Ockley silt loam, 2 to 6 percent slopes	Madison, IN	Moderate
UetB	Urban land-Glynwood complex, 2 to 6 percent slopes	Delaware, IN	Moderate
UhaB	Urban land-Wawaka-Miami complex, 1 to 6 percent slopes	Delaware, IN	Moderate
WbgB3	Wapahani clay loam, 1 to 5 percent slopes, severely eroded	Delaware, IN	Moderate
WbgC3	Wapahani clay loam, 5 to 10 percent slopes, severely eroded	Delaware, IN	Moderate

<b>Map Unit Symbol</b>	<b>Map Unit Name</b>	<b>County</b>	<b>Erosion Potential</b>
WdrB2	Wawaka silt loam, 2 to 6 percent slopes, eroded	Delaware, IN	Moderate
EsC2	Eldean-Morley complex, 6 to 15 percent slopes, eroded	Shelby, OH	Severe
FoD2	Fox silt loam, 12 to 18 percent slopes, moderately eroded	Madison, IN	Severe
FsC2	Fox silt loam, till substratum, 6 to 12 percent slopes, moderately eroded	Madison, IN	Severe
FtC3	Fox soils, 6 to 12 percent slopes, severely eroded	Madison, IN	Severe
FgrC3	Fox-Muncie clay loams, 6 to 12 percent slopes, severely eroded	Delaware, IN	Severe
GmD3	Glynwood clay loam, 12 to 18 percent slopes, severely eroded	Shelby, OH	Severe
GlpC2	Glynwood clay loam, 6 to 12 percent slopes, eroded	Delaware, IN	Severe
Gwd5C2	Glynwood clay loam, 6 to 12 percent slopes, eroded	Darke, OH	Severe
GlpC3	Glynwood clay loam, 6 to 12 percent slopes, severely eroded	Randolph, IN; Shelby, OH	Severe
Gwg5C3	Glynwood clay loam, 6 to 12 percent slopes, severely eroded	Shelby, OH	Severe
Gwg5C2	Glynwood clay loam, ground moraine, 6 to 12 percent slopes, eroded	Darke, OH	Severe
GID2	Glynwood silt loam, 12 to 18 percent slopes, eroded	Randolph, IN; Shelby, OH	Severe
GlyC3	Glynwood-Mississinewa clay loams, 6 to 12 percent slopes, severely eroded	Delaware, IN	Severe
GwM5C3	Glynwood-Mississinewa clay loams, 6 to 12 percent slopes, severely eroded	Shelby, OH	Severe
LoC3	Losantville clay loam, 6 to 12 percent slopes, severely eroded	Randolph, IN	Severe
LteE	Lybrand-Belmore loams, 15 to 30 percent slopes	Delaware, IN	Severe
MmcC2	Miami loam, 6 to 12 percent slopes, eroded	Delaware, IN	Severe
MnC2	Miami silt loam, 6 to 12 percent slopes, moderately eroded	Madison, IN	Severe
MpD3	Miami soils, 12 to 18 percent slopes, severely eroded	Madison, IN	Severe
MhE	Miamian silt loam, 18 to 25 percent slopes	Shelby, OH	Severe
MhF	Miamian silt loam, 25 to 50 percent slopes	Shelby, OH	Severe

Map Unit Symbol	Map Unit Name	County	Erosion Potential
MumD2	Morley silt loam, 10 to 15 percent slopes, eroded	Delaware, IN	Severe
MxE	Morley silt loam, 18 to 25 percent slopes	Shelby, OH	Severe
MxF	Morley silt loam, 25 to 50 percent slopes	Shelby, OH	Severe
SvsG	Strawn-Belmore loams, 30 to 50 percent slopes	Delaware, IN	Severe

Source: USDA NRCS, June 2014a, Custom Soil Reports for Marion, Hancock, Madison, Delaware, and Randolph Counties, Indiana; Darke and Shelby Counties, Ohio; and Jefferson County, Kentucky, accessed June 15-18, 2014, <http://websoilsurvey.nrcs.usda.gov/app/>.

Note: Urban soils, predominately in Indianapolis and Louisville, have not been rated for soil erosion potential.

**Table C-2. Soils in the Vicinity of the L&I Line in the Study Area with Moderate and Severe Potential for Erosion Hazard on Roads and Trails**

Map Unit Symbol	Map Unit Name	County	Erosion Potential
CsB2	Crosby-Miami silt loams, 2 to 4 percent slopes, eroded	Johnson, IN	Moderate
FoB2	Fox loam, 2 to 6 percent slopes, eroded	Johnson, IN	Moderate
MnB2	Miami silt loam, 2 to 6 percent slopes, eroded	Johnson, IN	Moderate
MnC2	Miami silt loam, 6 to 12 percent slopes, eroded	Johnson, IN	Moderate
MnD2	Miami silt loam, 12 to 18 percent slopes, eroded	Johnson, IN	Severe
MnE	Miami silt loam, 18 to 25 percent slopes	Johnson, IN	Severe

Source: USDA NRCS, 2014b, Custom Soil Reports for Johnson and Bartholomew Counties, Indiana, accessed June 18, 2014, <http://websoilsurvey.nrcs.usda.gov/app/>.

Note: All affected soils in Bartholomew County, Indiana, are rated as a slight risk of erosion.

## References

USDA NRCS. 2014a. Custom Soil Reports for Marion, Hancock, Madison, Delaware, and Randolph Counties, Indiana; Darke and Shelby Counties, Ohio; and Jefferson County, Kentucky. Accessed June 15-18, 2014. <http://websoilsurvey.nrcs.usda.gov/app/>.

USDA NRCS. 2014b. Custom Soil Reports for Johnson and Bartholomew Counties, Indiana. Accessed June 18, 2014. <http://websoilsurvey.nrcs.usda.gov/app/>.